

Scientific Software Engineer

Job Reference: SciSE
Posted: May 2019

Location: London, UK
Weekly Hours: 40

The Role

DNAe, the inventors of semiconductor-based next-generation sequencing (NGS) technology, are developing a revolutionary new platform that enables NGS-based diagnostic capability in an easy to use, cartridge-based system. This system will deliver clinically relevant, actionable results directly from clinical specimens in a matter of hours.

We are currently looking for a talented **Software Engineer** to join the existing multi-disciplinary NGS platform development team who will help us take our analysis framework to the next level.

Responsibilities – General

We are looking for self-starting, enthusiastic software engineers who find passion in working on complex scientific problems and make good use of a high level of autonomy. DNAe instruments produce high volumes of real time data. The role involves developing and maintaining a high-throughput pipeline including data analysis, data handling (new file formats), visualization and orchestration. A high level of creativity and problem solving will be essential to define, analyse and visualize the sequencing data and associated metrics. Specific activities include,

- Develop DNA basecaller and time-series data analysis including algorithms, error profile metrics and data visualization methodologies.
- Perform ad hock analysis of data sets generated by ongoing R&D work including but not limited to modelling of raw electronic signals generated by the DNAe NGS platform
- Drive the software through the full life cycle, including software requirements, design, implementation, testing and maintenance using Agile development methodologies
- In collaboration with the IT department and independent contractors (as required), develop and maintain an IT infrastructure to support robust and efficient data management, analysis and storage in a regulated environment



Person Specification

Our scientists and engineers thrive on working within interdisciplinary teams. You should have a practical, self-motivated approach to your work, feeling comfortable with working in a small, dynamic start up environment. We are looking for people with a passion for their work - people who strive for exceptional results and who can deliver pragmatic solutions on time.

The ideal candidate also likes to contribute to solving problems outside their field of immediate expertise and is an effective communicator.

Required qualifications and experience

- Bachelor's degree or MS in Computer Science, Bioinformatics, Physics, Mathematics or equivalently technical discipline
- Several years of software development experience in Python, ideally with scientific packages such as NumPy, SciPy, Pandas, Seaborn
- Experience working with version control (e.g. git), issue tracking (e.g. Redmine), and continuous integration software (e.g. Jenkins)
- Understanding and demonstrable skills in at least one of the following areas: real-time signal processing, NGS data analysis, optimisation, and machine learning
- Confident in a mixed Windows/Linux environment
- Excellent problem-solving skills
- Self-starter and ability to learn quickly on the job
- Interest in working in a fast-paced yet research-oriented environment
- Clear communication skills both written and verbal

Desired

- PhD in Computer Science, Physics, Mathematics, or equivalently technical discipline.
- Prior experience developing DNA base calling algorithms would be a big plus
- Experience with scientific Python libraries - SciPy, NumPy, Pyplot, Pandas and Jupiter notebook
- Experience developing in C++ and its tool chain, ideally with working knowledge of advanced libraries such as Boost, Qt, and POCO
- Experience writing web apps using Flask (or similar framework), Jinja2, and JavaScript
- Working knowledge of binary file formats based on HDF5, but also bioinformatics file formats like FASTQ, BAM and SAML
- Working with large data sets: Real time data processing, grid computing
- Deep knowledge of statistical and machine learning methods is a big bonus



Location

While our team is located in DNA Electronics headquarters, West London at White City, London, UK, you will also work with other team members in San Diego, CA.

Apply

If you believe you meet the above criteria and would relish playing a key role in developing a revolutionary technology, we would be delighted to hear from you. We offer a competitive compensation package to successful candidates.

Please email your CV, making a note of your salary expectations and availability in the email to: careers@dnae.com quoting the **job title and your name** in the subject line.

For more information about DNAe, please visit our website www.dnae.com
